

QUESTION #4

ATTACHMENT #2

# DIESEL FUEL MSDS



# No. 2 Diesel Fuel

## Material Safety Data Sheet

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** No. 2 Diesel Fuel

**MSDS Code:** 001847

**Synonyms:** CARB Diesel TF3; CARB Diesel; CARB Diesel 10%  
CARB Diesel Ultra Low Sulfur - Dyed and Undyed  
EPA Low Sulfur Diesel Fuel - Dyed and Undyed  
EPA Off Road High Sulfur Diesel - Dyed  
High Sulfur Diesel Fuel; Low Sulfur Diesel Fuel  
No. 2 Diesel Fuel Oil  
No. 2 High Sulfur Diesel - Dyed  
No. 2 Low Sulfur Diesel - Dyed; No. 2 Low Sulfur Diesel - Undyed  
No. 2 Low Sulfur Distillate  
No. 2 Ultra Low Sulfur Diesel - Dyed; No. 2 Ultra Low Sulfur Diesel - Undyed  
Super Diesel Fuel; Super Diesel Fuel II-LS  
Virgin Diesel Fuel; No. 2 Distillate  
ULSD  
Super Diesel Fuel; Super Diesel Fuel II-LS  
Virgin Diesel Fuel

**Intended Use:** Fuel

**Responsible Party:** ConocoPhillips  
600 N. Dairy Ashford  
Houston, Texas 77079-1175

**MSDS Information:** Phone: 800-762-0942  
Email: [MSDS@conocophillips.com](mailto:MSDS@conocophillips.com)  
Internet: <http://w3.conocophillips.com/NetMSDS/>

**Emergency Telephone Numbers:** Chemtrec: 800-424-9300 (24 Hours)  
California Poison Control System: 800-356-3219

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

**WARNING!**  
Flammable Liquid and Vapor  
Skin Irritant  
Aspiration Hazard

#### NFPA



**Appearance:** Straw colored to dyed red

**Physical Form:** Liquid

**Odor:** Diesel fuel

#### Potential Health Effects

**Eye:** Contact may cause mild eye irritation including stinging, watering, and redness.

**Skin:** Mild to moderate skin irritant. Contact may cause redness, itching, a burning sensation, and skin damage. Prolonged or repeated contact may cause drying and cracking of the skin, dermatitis (inflammation), burns, and severe skin damage. No harmful effects from skin absorption have been reported.

**Inhalation (Breathing):** No information available on acute toxicity. See signs and symptoms.

**Ingestion (Swallowing):** Low degree of toxicity by ingestion. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

**Signs and Symptoms:** Effects of overexposure may include irritation of the respiratory tract, irritation of the digestive tract, nausea, diarrhea, signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

**Pre-Existing Medical Conditions:** Conditions aggravated by exposure may include skin disorders.

See Section 11 for additional Toxicity Information.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS	Concentration (wt %)
Diesel Fuel No. 2	68476-34-6	100
Naphthalene	91-20-3	<1

### 4. FIRST AID MEASURES

**Eye:** If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

**Skin:** Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention.

**Inhalation (Breathing):** Immediately move victim away from exposure and into fresh air. If respiratory symptoms or other symptoms of exposure develop, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

**Ingestion (Swallowing):** Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

### 5. FIRE-FIGHTING MEASURES

#### NFPA 704 Hazard Class

**Health:** 1    **Flammability:** 2    **Instability:** 0    (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

**Unusual Fire & Explosion Hazards:** This material is flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. If container is not properly cooled, it can rupture in the heat of a fire.

**Extinguishing Media:** Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

**Fire Fighting Instructions:** For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof electrical equipment is recommended.

**Spill precautions:** Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8).

**Environmental precautions:** Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material.

**Methods for cleaning up:** Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

## 7. HANDLING AND STORAGE

**Handling:** Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Section 8).

Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

**Storage:** Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component	ACGIH	OSHA	Other:
Diesel Fuel No. 2	TWA: 100 mg/m <sup>3</sup> Skin	---	---

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

**Engineering controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits additional engineering controls may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

### Personal Protective Equipment (PPE):

**Eye/Face:** Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

**Skin:** The use of nitrile gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation, and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, nitrile apron and/or arm covers may be necessary.

**Respiratory:** A NIOSH certified air purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode if there is potential for an oxygen-deficient atmosphere, uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

**Other Protective Equipment:** Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse. It is recommended that impervious clothing be worn when skin contact is possible.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Note:** Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

<b>Appearance:</b>	Straw colored to dyed red
<b>Physical Form:</b>	Liquid
<b>Odor:</b>	Diesel fuel
<b>Odor Threshold:</b>	No data
<b>pH:</b>	Not applicable
<b>Vapor Pressure:</b>	0.40 mm Hg
<b>Vapor Density (air=1):</b>	> 3
<b>Boiling Point/Range:</b>	300-690°F / 149-366°C
<b>Melting/Freezing Point:</b>	No data
<b>Solubility in Water:</b>	Negligible
<b>Partition Coefficient (n-octanol/water) (Kow):</b>	No data
<b>Specific Gravity:</b>	0.81-0.88 @ 60°F (15.6°C)
<b>Bulk Density:</b>	7.08 lbs/gal
<b>Percent Volatile:</b>	Negligible @ ambient conditions
<b>Evaporation Rate (nBuAc=1):</b>	<1
<b>Flash Point:</b>	125-180°F / 52-82°C
<b>Test Method:</b>	Pensky-Martens Closed Cup (PMCC), ASTM D93, EPA 1010
<b>LEL (vol % in air):</b>	0.3
<b>UEL (vol % in air):</b>	10.0
<b>Autoignition Temperature:</b>	500°F / 260°C

## 10. STABILITY AND REACTIVITY

**Stability:** Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Flammable liquid and vapor. Vapor can cause flash fire.

**Conditions to Avoid:** Avoid all possible sources of ignition (see Sections 5 and 7).

**Materials to Avoid (Incompatible Materials):** strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc..

**Hazardous Decomposition Products:** Combustion can yield carbon, nitrogen and sulfur oxides. The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels. Diesel engine exhaust contains hazardous combustion products and has been classified as a probable cancer hazard in humans.

**Hazardous Polymerization:** Will not occur.

## 11. TOXICOLOGICAL INFORMATION

**Chronic Data:**

#### Diesel Fuel No. 2

**Carcinogenicity:** Petroleum middle distillates have been shown to cause skin tumors in mice following repeated and prolonged skin contact. Follow-up studies have shown that these tumors are produced through a non-genotoxic mechanism associated with frequent cell damage and repair, and that they are not likely to cause tumors in the absence of prolonged skin irritation. Animal studies have also shown that washing the skin with soap and water can reduce the tumor response. Middle distillates with low polynuclear aromatic hydrocarbon content have not been identified as a carcinogen by NTP, IARC or OSHA. Diesel exhaust has been identified as a probable cancer hazard by IARC.

**Target Organs:** Limited evidence of renal impairment has been noted from a few older case reports involving excessive exposure to diesel fuel No. 2. However, renal toxicity has not been demonstrated to be a consistent finding of diesel fuel exposure.

#### Naphthalene

**Carcinogenicity:** Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been identified as a carcinogen by IARC and NTP.

#### Acute Data:

Component	Oral LD50	Dermal LD50	Inhalation LC50
Diesel Fuel No. 2	9 ml/kg (Rat)	>5ml/kg (Rabbit)	No data available

## 12. ECOLOGICAL INFORMATION

When middle distillate hydrocarbons escape into the environment due to leaks or spills, most of their constituent hydrocarbons will evaporate and be photodegraded by reaction with hydroxyl radicals in the atmosphere. The half-lives in air for many of the individual hydrocarbons is less than one day. Less volatile hydrocarbons can persist in the aqueous environment for longer periods. They remain floating on the surface of the water; those that reach soil or sediment biodegrade relatively slowly. Soil contaminated with middle distillates can develop adapted microbial species able to use the fuel as a carbon source; soil aeration and nutrient supplementation can enhance this biodegradation.

Reported LC50/EC50 values for water-soluble fractions of middle distillates are usually in the range of 10 to 100 mg/liter. Adverse effects on the gills, pseudobranch, kidney and nasal mucosa have been reported in fish involved in spills of middle distillates. Juvenile clams may be particularly sensitive to marine sediments contaminated as a result of spilled material. Direct toxicity and fouling of sea birds can occur if birds dive through floating layers of spilled material.

Phytotoxic effects of middle distillate hydrocarbons have been reported following exposure of plants to sprays or vapors. Lack of seed germination and inhibition of seedling growth may also occur. There is evidence for moderate bioaccumulation of the water-soluble hydrocarbons present in middle distillates.

## 13. DISPOSAL CONSIDERATIONS

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste. However, it would likely be identified as a federally regulated RCRA hazardous waste for the following characteristic(s) shown below. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

Container contents should be completely used and containers should be emptied prior to discard. Container residues and rinseates could be considered to be hazardous wastes.

#### EPA Waste Number(s)

- D001 - Ignitability characteristic

## 14. TRANSPORTATION INFORMATION

U.S. Department of Transportation (DOT)

#### 14. TRANSPORTATION INFORMATION

**Shipping Description:** Diesel fuel, Combustible liquid, NA1993, III  
**Non-Bulk Package Marking:** Not Regulated [49 CFR 173.150(f)(2)]  
**Non-Bulk Package Labeling:** Not Regulated [49 CFR 173.150(f)(2)]  
**Bulk Package/Placard Marking:** Combustible/1993  
**Packaging - References:** None; none; 49 CFR 173.241  
(Exceptions; Non-bulk; Bulk)  
**Emergency Response Guide:** 128  
**Note:** *May also be shipped as:* Diesel fuel, Combustible liquid, UN1202, III  
*Bulk Package/Placard Marking would also be changed to:* 1202

#### International Maritime Dangerous Goods (IMDG)

**Shipping Description:** *Not regulated if flashpoint is >60° C closed-cup*  
UN1202, Diesel fuel, 3, III, (FP° C), where FP is the material's flash point in degrees C.  
**Non-Bulk Package Marking:** Diesel fuel, UN1202  
**Labels:** Flammable liquid  
**Placards/Marking (Bulk):** Flammable/1202  
**Packaging - Non-Bulk:** P001, LP01  
**EMS:** F-E, S-E  
**Note:** *May also replace Diesel fuel with Gas Oil or Heating Oil, light as the Shipping Name*

#### International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)

**UN/ID #:** *Not regulated if flashpoint is >60° C cc*  
UN1202  
**Proper Shipping Name:** Diesel fuel  
**Hazard Class/Division:** 3  
**Packing Group:** III  
**Non-Bulk Package Marking:** Diesel fuel, UN1202  
**Labels:** Flammable liquid  
**ERG Code:** 3L

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
<b>Packaging Instruction #:</b>	Y309	309	310
<b>Max. Net Qty. Per Package:</b>	10 L	60 L	220 L

#### 15. REGULATORY INFORMATION

##### CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):

This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

##### CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

**Acute Health:** Yes  
**Chronic Health:** Yes  
**Fire Hazard:** Yes  
**Pressure Hazard:** No  
**Reactive Hazard:** No

##### CERCLA/SARA - Section 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

Component	Concentration (wt %)	de minimis
Naphthalene	<1	0.1%

##### EPA (CERCLA) Reportable Quantity (in pounds):

EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).



**California Proposition 65:**

Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Type of Toxicity
Toluene	Developmental Toxicant
Benzene	Cancer Developmental Toxicant Male Reproductive Toxicant
Naphthalene	Cancer

Diesel engine exhaust, while not a component of this material, is on the Proposition 65 list of chemicals known to the State of California to cause cancer.

**Canadian Regulations:**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

B3 - Combustible Liquids  
D2A - Very Toxic Material  
D2B - Toxic Material

**National Chemical Inventories:**

Component	AICS	DSL	NDSL	CHINA	ELINCS	EINECS	ENCS	KOREA	PICCS	TSCA
Diesel Fuel No. 2 68476-34-6	X	X		X		X		X	X	X

**U.S. Export Control Classification Number:** EAR99

**16. OTHER INFORMATION**

<b>Issue Date:</b>	12-Mar-2007
<b>Status:</b>	Final
<b>Product Code:</b>	Multiple
<b>Revised Sections or Basis for Revision:</b>	Fire Fighting information (Section 5)
<b>MSDS Code:</b>	001847

**MSDS Legend:**

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service Registry; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

**Disclaimer of Expressed and implied Warranties:**

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

# **GASOLINE MSDS**



# Unbranded Conventional Gasoline

## Material Safety Data Sheet

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Unbranded Conventional Gasoline

**MSDS Code:** 724020

**Synonyms:** Gasoline, Unleaded, Conventional (All Grades);  
Gasoline, Low Sulfur Unleaded (All Grades)

**Intended Use:** Fuel

**Responsible Party:** ConocoPhillips  
600 N. Dairy Ashford  
Houston, Texas 77079-1175

**Customer Service:** 800-640-1956

**Technical Information:** 800-255-9556

**MSDS Information:** Phone: 800-762-0942  
Email: [MSDS@conocophillips.com](mailto:MSDS@conocophillips.com)  
Internet: <http://w3.conocophillips.com/NetMSDS/>

**Emergency Telephone Numbers:** Chemtrec: 800-424-9300 (24 Hours)  
California Poison Control System: 800-356-3219

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

**DANGER!**  
Extremely Flammable Liquid and Vapor  
Skin Irritant  
Aspiration Hazard

#### NFPA



**Appearance:** Clear to amber  
**Physical Form:** Liquid  
**Odor:** Gasoline

#### Potential Health Effects

**Eye:** Contact may cause mild eye irritation including stinging, watering, and redness.

**Skin:** Skin irritant. Contact may cause redness, itching, a burning sensation, and skin damage. Prolonged or repeated contact can defat the skin, causing drying and cracking of the skin, and possibly dermatitis (inflammation). Not acutely toxic by skin absorption, but prolonged or repeated skin contact may be harmful (see Section 11).

**Inhalation (Breathing):** Low to moderate degree of toxicity by inhalation.

**Ingestion (Swallowing):** Low degree of toxicity by ingestion. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

**Signs and Symptoms:** Effects of overexposure may include nausea, vomiting, flushing, blurred vision, tremors, respiratory failure, signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue), unconsciousness, convulsions, death.

**Pre-Existing Medical Conditions:** Conditions aggravated by exposure may include skin disorders, respiratory (asthma-like) disorders. Exposure to high concentrations of this material may increase the sensitivity of the heart to certain drugs. Persons with pre-existing heart disorders may be more susceptible to this effect (see Section 4 - Note to Physicians).

See Section 11 for additional Toxicity Information.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS	Concentration (wt %)
Gasoline	NONE	100
Benzene	71-43-2	0-5

### 4. FIRST AID MEASURES

**Eye:** If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

**Skin:** Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention.

**Inhalation (Breathing):** Immediately move victim away from exposure and into fresh air. If respiratory symptoms or other symptoms of exposure develop, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

**Ingestion (Swallowing):** Aspiration hazard. Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

**Notes to Physician:** Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

Federal regulations (29 CFR 1910.1028) specify medical surveillance programs for certain exposures to benzene above the action level or PEL (specified in Section (i)(1)(i) of the Standard). In addition, employees exposed in an emergency situation shall, as described in Section (i)(4)(i), provide a urine sample at the end of the shift for measurement of urine phenol.

### 5. FIRE-FIGHTING MEASURES

#### NFPA 704 Hazard Class

**Health:** 1    **Flammability:** 3    **Instability:** 0    (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

**Unusual Fire & Explosion Hazards:** This material is extremely flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. If container is not properly cooled, it can rupture in the heat of a fire.

**Extinguishing Media:** Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

**Fire Fighting Instructions:** For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Extremely flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof electrical equipment is recommended.

**Spill precautions:** Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8).

**Environmental precautions:** Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material.

**Methods for cleaning up:** Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended.

## 7. HANDLING AND STORAGE

**Handling:** Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

**Storage:** Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component	ACGIH	OSHA	Other:
Gasoline	300 ppm TWA 890 mg/m <sup>3</sup> TWA 500 ppm STEL 1480 mg/m <sup>3</sup> STEL	---	---
Xylenes	TWA: 100 ppm STEL: 150 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	---
Toluene	TWA: 20 ppm	Ceiling: 300 ppm TWA: 200 ppm	---
Benzene	TWA: 0.5 ppm STEL: 2.5 ppm Skin	Ceiling: 25 ppm STEL: 5 ppm TWA: 1 ppm TWA: 10 ppm	---

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Contains benzene. If exposure concentrations exceed the 0.5 ppm action level, OSHA requirements for personal protective equipment, exposure monitoring, and training may apply (29CFR1910.1028). Also see Section 4.

**Engineering controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits additional engineering controls may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

**Personal Protective Equipment (PPE):**

**Eye/Face:** Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

**Skin:** The use of nitrile gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation, and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, nitrile apron and/or arm covers may be necessary.

**Respiratory:** A NIOSH certified air purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode if there is potential for an oxygen-deficient atmosphere, uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

If benzene values equal or exceed applicable exposure limits the use of respiratory protection should comply with the requirements in OSHA 29 CFR 1910.1028-Benzene.

**Other Protective Equipment:** A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Note:** Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).  
Data represent typical values and are not intended to be specifications.

<b>Appearance:</b>	Clear to amber
<b>Physical Form:</b>	Liquid
<b>Odor:</b>	Gasoline
<b>Odor Threshold:</b>	No data
<b>pH:</b>	Not applicable
<b>Vapor Pressure:</b>	350-750 mm Hg @ 100°F / 7-25 psia (Reid VP) @ 100°F
<b>Vapor Density (air=1):</b>	>1
<b>Boiling Point/Range:</b>	81-441°F / 26-227°C
<b>Melting/Freezing Point:</b>	No data
<b>Solubility in Water:</b>	Negligible
<b>Partition Coefficient (n-octanol/water) (Kow):</b>	No data
<b>Specific Gravity:</b>	0.72-0.75 @ 60°F (15.6°C)
<b>Bulk Density:</b>	6.17 lbs/gal
<b>Percent Volatile:</b>	100%
<b>Evaporation Rate (nBuAc=1):</b>	>1
<b>Flash Point:</b>	<-49°F / <-45°C
<b>Test Method:</b>	(estimate)
<b>LEL (vol % in air):</b>	1.4
<b>UEL (vol % in air):</b>	7.6
<b>Autoignition Temperature:</b>	833°F / 445°C

## 10. STABILITY AND REACTIVITY

**Stability:** Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Extremely flammable liquid and vapor. Vapor can cause flash fire.

**Conditions to Avoid:** Avoid all possible sources of ignition (see Sections 5 and 7).

**Materials to Avoid (Incompatible Materials):** strong oxidizing agents such as acids, chlorine, dichromates, or permanganates can cause fire or explosion.

**Hazardous Decomposition Products:** The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

**Hazardous Polymerization:** Will not occur.

## 11. TOXICOLOGICAL INFORMATION

### Chronic Data:

#### Gasoline

**Carcinogenicity:** Two year inhalation studies of wholly vaporized unleaded gasoline produced increased incidences of kidney tumors in male rats and liver tumors in female mice. Follow-up studies suggest that occurrence of the kidney tumors may be linked to alpha-2-u-globulin nephropathy, and most likely unique to the male rat. Epidemiology data collected from a study of more than 18,000 petroleum marketing and distribution workers showed no increased risk of leukemia, multiple myeloma, or kidney cancer from gasoline exposure. Unleaded gasoline has been identified as a possible carcinogen by IARC. Because solvent extracts of gasoline exhaust particulates caused skin cancer in laboratory animals, IARC has categorized gasoline engine exhaust as a possible human cancer hazard.

**Target Organs:** A two year inhalation study of wholly vaporized unleaded gasoline produced nephropathy in male rats, characterized by the accumulation of alpha-2-u-globulin in epithelial cells of the proximal tubules, and necrosis and hyperplasia of surrounding cells. Follow-up studies suggest that these changes are unique to the male rat.

**Reproductive:** No evidence of developmental toxicity was found in pregnant laboratory animals (rats and mice) exposed to up to 9,000 ppm vapor of unleaded gasoline via inhalation.

#### Xylenes

**Target Organs:** Rats exposed to 800, 1000 or 1200 ppm 14 hours daily for 6 weeks demonstrated high frequency hearing loss. Another study in rats exposed to 1800 ppm 8 hours daily for 5 days demonstrated middle frequency hearing loss.

**Reproductive:** Both mixed xylenes and the individual isomers produced limited evidence of developmental toxicity in laboratory animals. Inhalation and oral administration of xylene resulted in decreased fetal weight, increased incidences of delayed ossification, skeletal variations and resorptions.

#### Toluene

**Target Organs:** Epidemiology studies suggest that chronic occupational overexposure to toluene may damage color vision. Subchronic and chronic inhalation studies with toluene produced kidney and liver damage, hearing loss and central nervous system (brain) damage in laboratory animals. Intentional misuse by deliberate inhalation of high concentrations of toluene has been shown to cause liver, kidney, and central nervous system damage, including hearing loss and visual disturbances.

**Reproductive:** Exposure to toluene during pregnancy has demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased fetal body weight and increased skeletal variations in both inhalation and oral studies.

#### Ethyl Benzene

**Carcinogenicity:** Rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study demonstrated limited evidence of kidney, liver, and lung cancer. Ethyl benzene has been listed as a possible human carcinogen by IARC. Ethyl benzene has not been listed as a carcinogen by NTP, or OSHA.

#### Benzene

**Carcinogenicity:** Benzene is known to cause cancer of the blood-forming organs in humans, including acute myelogenous leukemia. It has been identified as a human carcinogen by NTP, IARC and OSHA.

**Target Organs:** Prolonged or repeated exposures to benzene vapors can cause damage to the blood and blood forming organs, including disorders like leukopenia, thrombocytopenia, and aplastic anemia.

**Reproductive:** Exposure to benzene during pregnancy demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased body weight and increased skeletal variations in rodents. Alterations in hematopoiesis have been observed in the fetuses and offspring of pregnant mice.

**Mutagenic Effects:** Benzene exposure has resulted in chromosomal aberrations in human lymphocytes and animal bone marrow cells, and DNA damage in mammalian cells in vitro.

#### n-Hexane

**Target Organs:** Excessive exposure to n-hexane can result in peripheral neuropathies. The initial symptoms are symmetrical sensory numbness and paresthesias of distal portions of the extremities. Motor weakness is typically observed in muscles of the toes and fingers but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. The neurotoxic properties of n-hexane are potentiated by exposure to methyl ethyl ketone and methyl isobutyl ketone.

**Reproductive:** Prolonged exposure to high concentrations of n-hexane (>1,000 ppm) has resulted in decreased sperm count and degenerative changes in the testes of rats but not those of mice.

**Acute Data:**

Component	Oral LD50	Dermal LD50	Inhalation LC50
Gasoline	18.75 ml/kg. (Rat)	>5 ml/kg (Rabbit)	300g/m <sup>3</sup> /5M (rat, mouse, g.pig)

## 12. ECOLOGICAL INFORMATION

The individual hydrocarbon components of this material are differentially soluble in water with aromatic hydrocarbons tending to be more water soluble than aliphatic hydrocarbons. If spilled, the more volatile components will evaporate rapidly. Factors such as local environmental conditions (temperature, wind, soil type, mixing or wave action in water, etc), photo-oxidation, biodegradation and adsorption onto suspended sediments, contribute to the weathering of spilled material. Because of their differential solubility, the occurrence of hydrocarbons in groundwater will be at different proportions than the parent material.

The potential for bioaccumulation and/or long term persistence of these materials in the environment is low to non-existent. In laboratory soil column experiments, the half-time of unleaded gasoline was reported as 1.2 to 2.7 days in sand, loam or clay soils. Microorganisms present in sediments and in the water are capable of degrading gasoline and naphtha containing hydrocarbons. Simpler hydrocarbons are more readily degraded than complex molecules. Adaptation of bacteria in gasoline-contaminated groundwater to the soluble constituents has been reported.

In general, naphtha streams exhibit some short-term toxicity to freshwater and marine organisms, especially under closed vessel or flow-through exposure conditions in the laboratory. The components most likely causing toxicity are also highly volatile and can be readily biodegraded by microorganisms.

## 13. DISPOSAL CONSIDERATIONS

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste. However, it would likely be identified as a federally regulated RCRA hazardous waste for the following characteristic(s) shown below. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

Container contents should be completely used and containers should be emptied prior to discard. Container residues and rinsates could be considered to be hazardous wastes.

**EPA Waste Number(s)**

- D001 - Ignitability characteristic
- D018 - Toxicity characteristic (Benzene)

## 14. TRANSPORTATION INFORMATION

**U.S. Department of Transportation (DOT)**

Shipping Description:	Gasoline, 3, UN1203, II
Non-Bulk Package Marking:	Gasoline, UN1203
Non-Bulk Package Labeling:	Flammable liquid
Bulk Package/Placard Marking:	Flammable/1203
Packaging - References:	49 CFR 173.150; 173.202; 173.242
Emergency Response Guide:	128

**International Maritime Dangerous Goods (IMDG)**

Shipping Description:	UN1203, Gasoline, 3, II, (-45° C cc)
Non-Bulk Package Marking:	Gasoline, UN 1203
Labels:	Flammable liquid
Placards/Marking (Bulk):	Flammable/1203



#### 14. TRANSPORTATION INFORMATION

Packaging - Non-Bulk: P001  
EMS: F-E, S-E

##### International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)

UN/ID #: UN1203  
Proper Shipping Name: Gasoline  
Hazard Class/Division: 3  
Packing Group: II  
Non-Bulk Package Marking: Gasoline, UN1203  
Labels: Flammable liquid  
ERG Code: 3H

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:	Y305	305	307
Max. Net Qty. Per Package:	1 L	5 L	60 L

#### 15. REGULATORY INFORMATION

##### CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):

This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

##### CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

Acute Health: Yes  
Chronic Health: Yes  
Fire Hazard: Yes  
Pressure Hazard: No  
Reactive Hazard: No

##### CERCLA/SARA - Section 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

Component	Concentration (wt %)	de minimis
Xylenes	0-21	1.0%
Toluene	0-15	1.0%
Ethyl Benzene	0-5	0.1%
Benzene	0-5	0.1%
1,2,4-Trimethyl Benzene	0-5	1.0%
n-Hexane	0-4	1.0%
Cyclohexane	0-2	1.0%

##### EPA (CERCLA) Reportable Quantity (in pounds):

EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

##### California Proposition 65:

Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Type of Toxicity
Toluene	Developmental Toxicant
Benzene	Cancer Developmental Toxicant Male Reproductive Toxicant
Unleaded Gasoline (Wholly Vaporized)	Cancer

---

**Canadian Regulations:**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

B2 - Flammable Liquids

D2A - Very Toxic Material

**National Chemical Inventories:**

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.

All components are listed on the Canadian DSL.

**U.S. Export Control Classification Number:** EAR99

## 16. OTHER INFORMATION

<b>Issue Date:</b>	21-Jun-2007
<b>Status:</b>	Final
<b>Previous Issue Date:</b>	23-May-2007
<b>Revised Sections or Basis for Revision:</b>	Exposure limits (Section 8)
<b>MSDS Code:</b>	724020

**MSDS Legend:**

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service Registry; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

**Disclaimer of Expressed and implied Warranties:**

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

## JET FUEL MSDS



Jet A

**Safety Data Sheet**

**Section 1: Identification of the substance or mixture and of the supplier**

Product Name:	Jet A
SDS Number:	001975
Synonyms/Other Means of Identification:	Aviation Fuel Aviation Fuel - Jet A Aviation Turbine Fuel Jet 51 Grade Jet 54 Grade Jet 56 Grade Jet A 1 Jet A LS Jet Buckeye 182 Jet FTZ Jet Fuel Jet Low Aromatic Jet Raw Turbine Fuel
MARPOL Annex I Category:	Kerosenes
Intended Use:	Aviation Turbine Fuel
Manufacturer:	66 Aviation Products A Division of ConocoPhillips 600 N. Dairy Ashford Houston, Texas 77079-1175
Emergency Health and Safety Number:	Chemtrec: 800-424-9300 (24 Hours)
Customer Service:	800-234-6603
Technical Information:	918-661-6991
SDS Information:	URL: <a href="http://www.conocophillips.com">www.conocophillips.com</a>

**Section 2: Hazard(s) Identification**

**DANGER**

Flammable liquid and vapor. (H226)\*  
Causes skin irritation. (H315)\*  
May be fatal if swallowed and enters airways. (H304)\*  
May cause drowsiness or dizziness. (H336)\*  
Toxic to aquatic life with long lasting effects. (H411)\*



**Precautionary Statement(s):**

Keep out of reach of children. (P102)\*

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. (P210)\*

Wear protective gloves / protective clothing / eye protection / face protection. (P280)\*

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. (P301+P310)\*

Do NOT induce vomiting. (P331)\*

Dispose of contents/container to approved disposal facility. (P501)\*

\* (Applicable GHS hazard code.)

### Section 3: Composition / Information on Ingredients

Component	CASRN	Concentration <sup>1</sup>
Hydrotreated Distillate, Light ..C9-16	64742-47-8	0-100
Hydrodesulfurized Kerosene ..C9-16	64742-81-0	0-100
Kerosene ..C9-16	8008-20-6	0-100
Naphthalene	91-20-3	<1

**Total Sulfur:** < 0.4 wt%

<sup>1</sup> All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### Section 4: First Aid Measures

**Eye Contact:** If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

**Skin Contact:** Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention. Wash contaminated clothing before reuse.

**Inhalation (Breathing):** If respiratory symptoms develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If breathing is difficult, oxygen or artificial respiration should be administered by qualified personnel. If symptoms persist, seek medical attention.

**Ingestion (Swallowing):** Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

**Medical Conditions Aggravated by Exposure:** Conditions which may be aggravated by exposure include skin disorders.

### Section 5: Fire-Fighting Measures

**NFPA 704 Hazard Class**

**Health:** 1   **Flammability:** 2   **Instability:** 0   (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

**Unusual Fire & Explosion Hazards:** Flammable. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. This product will float and can be reignited on surface water. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

**Extinguishing Media:** Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

**Fire Fighting Instructions:** For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

**Hazardous Combustion Products:** Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulfur may also be formed.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

## Section 6: Accidental Release Measures

**Personal Precautions:** Flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

**Environmental Precautions:** Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use foam on spills to minimize vapors. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

**Methods for Containment and Clean-Up:** Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

## Section 7: Handling and Storage

**Precautions for safe handling:** Keep away from ignition sources such as heat/sparks/open flame – No smoking. Take precautionary measures against static discharge. Nonsparking tools should be used. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

**Transition SDS: Product is now manufactured by Phillips 66 Company.**  
**Emergency, Customer Service and Technical phone numbers have NOT changed.**  
**For SDS information please email SDS@P66.com or visit www.Phillips66.com.**

001975 - Jet A

**Date of Issue:** 12-Dec-2011

**Page 4/9**  
**Status: FINAL**

Flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames.

The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products (e.g. carbon monoxide, oxides of sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

**Static Accumulation Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding of tanks, transfer piping, and storage tank level floats are necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. Special care should be given to ensure that special slow load procedures for "switch loading" are followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such as gasoline or naphtha). For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

**Conditions for safe storage:** Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers. Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

## Section 8: Exposure Controls / Personal Protection

Component	ACGIH	OSHA	Other
Hydrotreated Distillate, Light ..C9-16	TWA: 200 mg/m <sup>3</sup> Skin based on Kerosene 8008-20-6	---	---
Hydrodesulfurized Kerosene ..C9-16	TWA: 200 mg/m <sup>3</sup> Skin based on Kerosene 8008-20-6	---	---
Kerosene ..C9-16	TWA: 200 mg/m <sup>3</sup> Skin based on Kerosene 8008-20-6	---	---
Naphthalene	STEL: 15 ppm	TWA: 10 ppm TWA: 50 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> (as total of 17 PNA's measured by NIOSH Method 5506) (ConocoPhillips Guidelines)

**Note:** State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

**Engineering controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.



**Eye/Face Protection:** The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, a face shield may be necessary.

**Skin/Hand Protection:** The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls, or encapsulated suits. Suggested protective materials: Nitrile

**Respiratory Protection:** Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with organic vapor cartridges/canisters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

**Other Protective Equipment:** Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

**Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.**

## Section 9: Physical and Chemical Properties

**Note:** Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

<b>Appearance:</b>	Clear, light yellow or light green
<b>Physical Form:</b>	Liquid
<b>Odor:</b>	Kerosene
<b>Odor Threshold:</b>	No data
<b>pH:</b>	Not applicable
<b>Vapor Pressure:</b>	0.40 mmHg
<b>Vapor Density (air=1):</b>	> 4.5
<b>Initial Boiling Point/Range:</b>	300 - 572 °F / 149 - 300 °C
<b>Melting/Freezing Point:</b>	< -40 °F / < -40 °C
<b>Solubility in Water:</b>	<0.1%
<b>Partition Coefficient (n-octanol/water) (Kow):</b>	No data
<b>Specific Gravity (water=1):</b>	0.775-0.840 @ 68°F / 20°C
<b>Bulk Density:</b>	6.73 lbs/gal
<b>Viscosity:</b>	1.5-2.5 cSt typical @ 68°F (20°C) / 8 max cSt @ -4°F (-20°C)
<b>Percent Volatile:</b>	98-100% @ 545°F (285°C)
<b>Evaporation Rate (nBuAc=1):</b>	<1
<b>Flash Point:</b>	100-150 °F / 38-66 °C
<b>Test Method:</b>	Tag Closed Cup (TCC), ASTM D56
<b>Lower Explosive Limits (vol % in air):</b>	0.6
<b>Upper Explosive Limits (vol % in air):</b>	4.7
<b>Auto-ignition Temperature:</b>	410 °F / 210 °C

## Section 10: Stability and Reactivity

**Stability:** Stable under normal ambient and anticipated conditions of use.

**Conditions to Avoid:** Avoid high temperatures and all sources of ignition. Prevent vapor accumulation.

**Materials to Avoid (Incompatible Materials):** Avoid contact with strong oxidizing agents and strong reducing agents.

**Hazardous Decomposition Products:** Not anticipated under normal conditions of use.



Hazardous Polymerization: Not known to occur.

## Section 11: Toxicological Information

### Information on Toxicological Effects of Substance/Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Expected to have a low degree of toxicity by inhalation		>5.2 mg/L (mist)
Skin Absorption	Unlikely to be harmful		> 2 g/kg
Ingestion (Swallowing)	Unlikely to be harmful		> 5 g/kg

**Aspiration Hazard:** May be fatal if swallowed and enters airways.

**Skin Corrosion/Irritation:** Causes skin irritation. Repeated exposure may cause skin dryness or cracking.

**Serious Eye Damage/Irritation:** Causes mild eye irritation.

**Signs and Symptoms:** While significant vapor concentrations are not likely, high concentrations can cause minor respiratory irritation, headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Ingestion can cause irritation of the digestive tract, nausea, diarrhea, and vomiting.

**Skin Sensitization:** Not expected to be a skin sensitizer.

**Respiratory Sensitization:** No information available.

**Specific Target Organ Toxicity (Single Exposure):** May cause drowsiness and dizziness.

**Specific Target Organ Toxicity (Repeated Exposure):** Not expected to cause organ effects from repeated exposure.

**Carcinogenicity:** Not expected to cause cancer. Petroleum middle distillates have been shown to cause skin tumors in mice following repeated and prolonged skin contact. Follow-up studies have shown that these tumors are produced through a non-genotoxic mechanism associated with frequent cell damage and repair, and that they are not likely to cause tumors in the absence of prolonged skin irritation.

**Germ Cell Mutagenicity:** Not expected to cause heritable genetic effects.

**Reproductive Toxicity:** Not expected to cause reproductive toxicity. Hydrodesulfurized kerosene applied to the skin of female rats at 494, 330, or 165 mg/kg daily for 7 consecutive weeks (premating, mating, and gestation), or for 8 consecutive weeks in males did not result in systemic, reproductive, or developmental toxicity.

### Information on Toxicological Effects of Components

#### Naphthalene

**Carcinogenicity:** Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The US National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been identified as a carcinogen by IARC and NTP.

## Section 12: Ecological Information

**Toxicity:** Acute aquatic toxicity studies on samples of jet fuel and kerosene streams show acute toxicity values greater than 1 mg/L and mostly in the range 1-100 mg/L. These tests were carried out on water accommodated fractions, in closed systems to prevent evaporative loss. Results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon composition. Kerosenes should be regarded as toxic to aquatic organisms, with the potential to cause long term adverse effects in the aquatic environment. Classification: H411; Chronic Cat 2.

**Persistence and Degradability:** The hydrocarbons in this material are not readily biodegradable but are regarded as inherently biodegradable since their hydrocarbon components can be degraded by microorganisms.

**Persistence per IOPC Fund definition:** Non-Persistent

**Bioaccumulative Potential:** Hydrocarbon constituents of kerosine show measured or predicted Log Kow values ranging from 3 to 6 and above and therefore would be regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bioconcentration.

**Mobility in Soil:** On release to water, hydrocarbons will float on the surface and since they are sparingly soluble, the only significant loss is volatilization to air. It is possible that some of the higher molecular weight hydrocarbons will be adsorbed on sediment. Biodegradation in water is a minor loss process. In air, these hydrocarbons are photodegraded by reaction with hydroxyl radicals with half lives varying from 0.1 to 0.7 days.

**Other Adverse Effects:** None anticipated.

### Section 13: Disposal Considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste. However, it would likely be identified as a federally regulated RCRA hazardous waste for the following characteristic(s) shown below. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

Container contents should be completely used and containers should be emptied prior to discard. Container residues and rinseates could be considered to be hazardous wastes.

**EPA Waste Number(s)**  
• D001 - Ignitability characteristic

### Section 14: Transport Information

#### U.S. Department of Transportation (DOT)

<b>Shipping Description:</b>	<b><i>Aquatic toxicity studies indicate material may be classified as a Marine Pollutant. This classification impacts bulk and water shipments.</i></b> UN1863, Fuel, aviation, turbine engine, Combustible liquid <b>or</b> 3, III
<b>Non-Bulk Package Marking:</b>	None <b>or</b> Fuel, aviation, turbine engine, UN1863
<b>Non-Bulk Package Labeling:</b>	None <b>or</b> Flammable liquid
<b>Bulk Package/Placard Marking:</b>	Combustible <b>or</b> Flammable/1863
<b>Packaging - References:</b>	None; None; 49 CFR 173.241 <b>or</b> 49 CFR 173.150; 173.203; 173.241 <b>(Exceptions; Non-bulk; Bulk)</b>
<b>Hazardous Substance:</b>	See Section 15 for RQ's
<b>Emergency Response Guide:</b>	128
<b>Note:</b>	<b><i>This product may be classified as a Combustible Liquid for domestic land transportation under 49 CFR 173.150(f). Combustible liquids are not regulated by DOT in non-bulk quantities shipped by land. If this material is determined to be a Marine Pollutant, it CANNOT be reclassified as a Combustible Liquid. Container(s) greater than 5 liters (liquids) or 5 kilograms (solids), shipped by water mode and ALL bulk shipments may require the shipping description to contain the "Marine Pollutant" notation [49 CFR 172.203(l)] and the container(s) to display the [Marine Pollutant Mark] [49 CFR 172.322].</i></b>  <b><i>The following alternate shipping description order may be used until January 1, 2013:</i></b> <b>Proper Shipping name, Hazard Class or Division, (Subsidiary Hazard if any), UN or NA number, Packing Group</b> <b><i>Other shipping description elements may be required for DOT compliance.</i></b>

#### International Maritime Dangerous Goods (IMDG)

<b>Shipping Description:</b>	UN1863, Fuel, aviation, turbine engine, 3, III, ( FP° C cc), [where FP is the material's flash point in degrees Celsius closed cup]
<b>Non-Bulk Package Marking:</b>	Fuel, aviation, turbine engine, UN1863
<b>Labels:</b>	Flammable liquid

Transition SDS: Product is now manufactured by Phillips 66 Company.  
Emergency, Customer Service and Technical phone numbers have NOT changed.  
For SDS information please email SDS@P66.com or visit www.Phillips66.com.

001975 - Jet A  
Date of Issue: 12-Dec-2011

Page 8/9  
Status: FINAL

**Placards/Marking (Bulk):** Flammable/1863  
**Packaging - Non-Bulk:** P001  
**EMS:** F-E, S-E  
**Note:** *U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 25. If container(s) is greater than 5 liters (liquids) or 5 kilograms (solids), shipment may require the shipping description to contain the "Marine Pollutant" description [IMDG 5.4.1.4.3.5] and the container(s) to display the Marine Pollutant mark [IMDG 5.2.1.6]. If transported in bulk by marine vessel in international waters, product is being carried under the scope of MARPOL Annex I.*

**International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)**

**UN/ID #:** UN1863  
**Proper Shipping Name:** Fuel, aviation, turbine engine  
**Hazard Class/Division:** 3  
**Subsidiary risk:** None  
**Packing Group:** III  
**Non-Bulk Package Marking:** Fuel, aviation, turbine engine, UN1863  
**Labels:** Flammable liquid  
**ERG Code:** 3L  
**Note:** *U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 24. If container(s) is greater than 5 liters (liquids) or 5 kilograms (solids), shipment may require the container to display the "Environmentally hazardous substance" mark [IATA 7.1.6.3].*

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
<b>Packaging Instruction #:</b>	Y344	355	366
<b>Max. Net Qty. Per Package:</b>	10 L	60 L	220 L

**Section 15: Regulatory Information**

**CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):**

This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

**CERCLA/SARA - Section 311/312 (Title III Hazard Categories)**

**Acute Health:** Yes  
**Chronic Health:** Yes  
**Fire Hazard:** Yes  
**Pressure Hazard:** No  
**Reactive Hazard:** No

**CERCLA/SARA - Section 313 and 40 CFR 372:**

This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

Component	Concentration <sup>1</sup>	de minimis
Naphthalene	<1	0.1%

**EPA (CERCLA) Reportable Quantity (in pounds):**

This material does not contain any chemicals with CERCLA Reportable Quantities.

**California Proposition 65:**

Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the warning requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Type of Toxicity
Toluene	Developmental Toxicant Female Reproductive Toxicant
Benzene	Cancer Developmental Toxicant Male Reproductive Toxicant
Naphthalene	Cancer

## **International Hazard Classification**

### **GHS Classification:**

H226 -- Flammable liquids -- Category 3  
H315 -- Skin corrosion/irritation -- Category 2  
H304 -- Aspiration Hazard -- Category 1  
H336 -- Specific target organ toxicity (single exposure) -- Category 3  
H411 -- Hazardous to the aquatic environment, chronic toxicity -- Category 2

### **Canada:**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Regulations.

### **WHMIS Hazard Class:**

B3 - Combustible Liquids  
D2B

## **National Chemical Inventories**

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA  
All components are either on the DSL, or are exempt from DSL listing requirements

**U.S. Export Control Classification Number:** EAR99

## **Section 16: Other Information**

<b>Date of Issue:</b>	12-Dec-2011
<b>Status:</b>	FINAL
<b>Previous Issue Date:</b>	04-Aug-2011
<b>Revised Sections or Basis for Revision:</b>	Product Name / Synonyms (Section 1)
<b>SDS Number:</b>	001975

### **Guide to Abbreviations:**

ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

### **Disclaimer of Expressed and Implied Warranties:**

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.